

How Heavy Is It?

Reporting Category Measurement

Topic Comparing two objects, using nonstandard units of measure, according to weight (heavier, lighter)

Materials

- Two-pan balance scale
- Bathroom scale
- Other types of scales (or pictures of scales)
- Small objects that will fit in the pans of the balance scale (e.g., small blocks of wood, a tennis ball, an apple, a pack of gum)

Vocabulary

measure, weight, heavier, lighter, balance, scale

Student/Teacher Actions (what students and teachers should be doing to facilitate learning)

1. Introduce students to different types of scales—e.g., balance scale, platform scale, bathroom scale, scale used in grocery stores, and scales found in the doctor's office.
2. Demonstrate how a bathroom scale's dial shows a measure of weight. Explain that a balance scale is like a seesaw and is used to compare the weight of two objects. Demonstrate with two of the objects. First, ask students which object they think is heavier and which is lighter. Help them develop the concept of weight by holding an object in each hand to determine which feels heavier before placing the objects on the balance scale. (Use objects that are the same size but very different in weight, e.g., full and empty boxes, full and empty jars.) Have the students compare the weights of the objects when they are placed in the scale, using the terms *heavier* and *lighter*, e.g., "The empty jar is lighter than the full jar. The full jar is heavier than the empty jar." Empty the scale, and repeat the process, using a pencil and a tennis ball. Keep repeating the activity until all students have had an opportunity to weigh different objects and compare their weights.
3. Extend the lesson by having students compare the weights of two different objects by using teddy bear counters. First, model how to weigh an object by using the number of teddy bear counters that will balance the scale—that is, the number that will equal the weight of the object. Then, place students into groups of four, and give each group a balance scale, four small objects to weigh, and a set of teddy bear counters. Have students weigh each object by balancing the object with a sufficient number of teddy bear counters.

Have students record the weight of each object by drawing the object and indicating the number of counters required to balance it on the scale.

Assessment

- **Questions**

- Display two different objects. “Which of these objects is heavier? How do you know?”
- “When do you weigh things in your everyday life? What kinds of things do you weigh?”

- **Journal/Writing Prompts**

- “Draw a picture of something that is heavier than you. Draw a picture of something that is lighter than you.”
- “You have a two-pan balance scale with a crayon in one pan and a pumpkin in the other pan. Draw how this would look.”

- **Other**

- Distribute small squash or gourds to each student. Have small groups of students measure the weight of their objects on a scale, using teddy bear counters, and then record the results on their recording sheets by drawing and indicating the number of counters required.
- On the 100th day of school, have each student bring in a small zip-top bag containing 100 items. Have small groups of students compare the weights of the various bags, using a scale. When they are finished, have them record the results on their recording sheets.

Extensions and Connections (for all students)

- Duplicate the balance scale extension activity as in #3 with a project focus. For example, have students prepare a trail mix that is heavier with a certain quantity of cereal than with the same quantity of M&M’s[®]. If successful, the students may eat the trail mix.